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THE FOREST SITUATION IN WYOMING AND SULLIVAN COUNTIES PENNSYLVANIA

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This is the fourth of a series of seven brief reports on the forest condition in the counties of the Anthracite Forest Region. This region includes 15 counties shown on the map on the back of this publication, which contain or surround the hard-coal deposits of Pennsylvania. Because of basic similarities, Wyoming and Sullivan Counties are treated together. The purpose is to present tabular data from the Anthracite Forest Survey for local use, together with enough general information about the two counties to make the forest situation understandable. Forest areas and present condition of the forest were determined through interpretation of aerial photographs, and the distribution of the major forest types was ascertained largely by reconnaissance. Data on species, size-classes, volume, and growth applicable to the several forest types and condition classes were collected by detailed field surveys.

Acknowledgment is made to John A. Buttrick and Donald F. Robinson for aid in compiling and writing the report, and to Robert Bartlett for preparation of charts and maps.

FOREST SITUATION IN WYOMING AND SULLIVAN COUNTIES

PENNSYLVANIA

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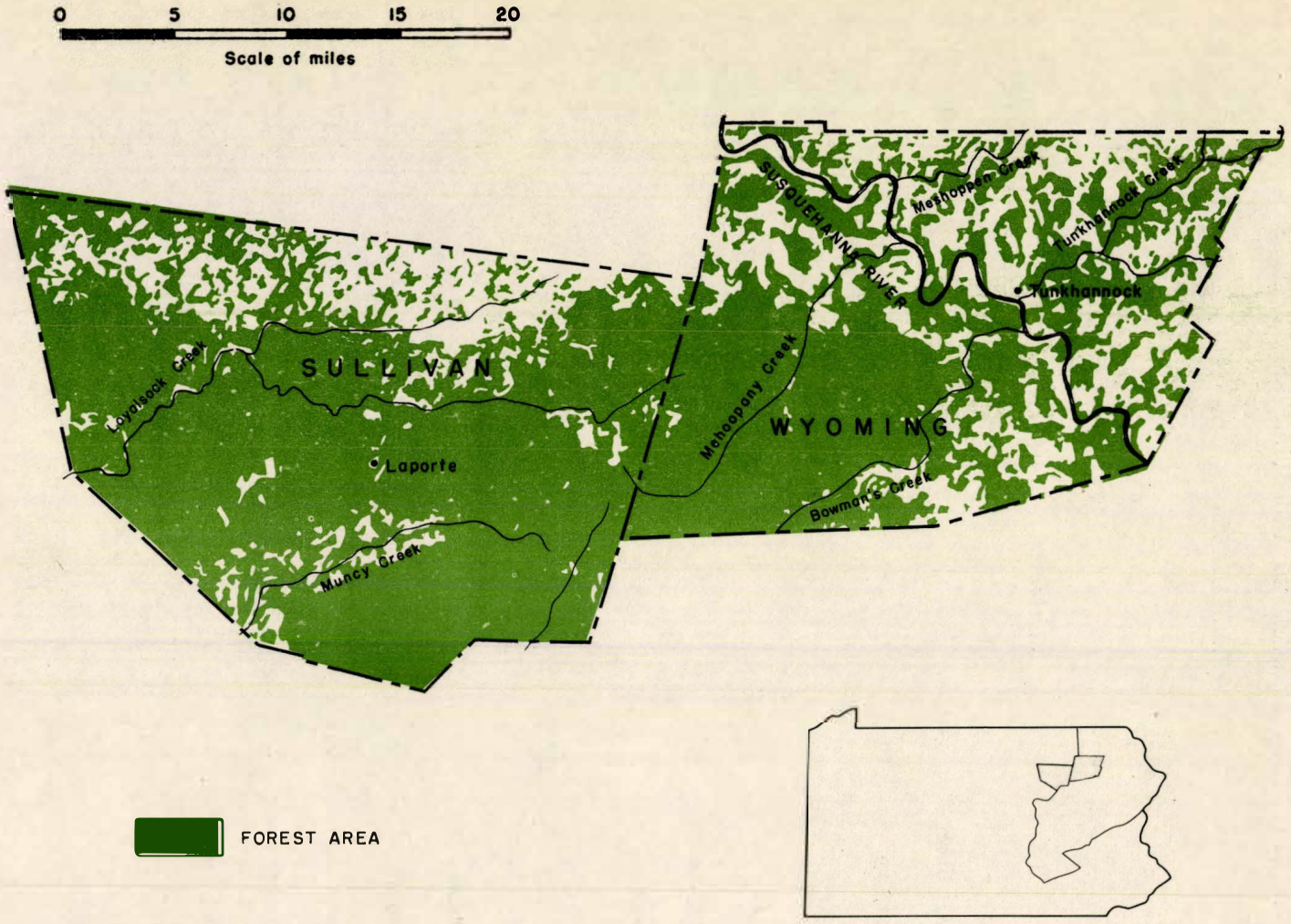


FIGURE 1.- FOREST AREA IN WYOMING & SULLIVAN COUNTIES OF PENNSYLVANIA.

THE FOREST SITUATION IN WYOMING AND SULLIVAN COUNTIES

Wyoming and Sullivan Counties are a sparsely-populated agricultural and lumbering region, the western part of which is virtually uninhabited. Small towns, a declining population, dairy farms, and extensive areas of unbroken forest characterize the area.

General Description

Wyoming and Sullivan Counties lie on the Allegheny Plateau, through which the Susquehanna River has cut a deep gorge. Into this gorge run the creeks that drain Wyoming County, the Tunkhannock and the Meshoppen flowing from the northeast and the Mehoopany from the southwest. The bulk of Sullivan County is drained westward into the west branch of the Susquehanna by the Loyalsock and Muncy Creeks. The entire country is semi-mountainous, with large areas in the western part lying at an elevation of over 2000 feet. East of the Susquehanna the land is somewhat lower and more rolling. In Sullivan County are several high lakes, the most famous being Eaglesmere at an altitude of 1998 feet. The total area of the two counties is 883 square miles or 565,120 acres.

Transportation

Transportation facilities in Wyoming and Sullivan Counties are comparatively poor. The main line of the Lehigh Valley Railroad follows the valley of the Susquehanna through Wyoming County. The Susquehanna and New York Railroad crosses the northwestern tip of Sullivan County, and the Delaware, Lackawanna and Western serves the eastern tip of Wyoming. There are over 400 miles of improved State highway and several hundred miles of rural roads. But much of the area, especially in Sullivan County, is almost inaccessible.

Population

The population of Wyoming and Sullivan Counties in 1940 was 24,206, a decrease of 5080 since the beginning of the century. Of these, 10,657, or 44 percent, lived on farms. The largest borough, Tunkhannock, the county seat of Wyoming County, had a population of 2161, and Nicholson Borough, also in Wyoming County, 1012. Dushore, the largest borough in Sullivan County, had only 739 inhabitants, and the population of the county seat, Laporte, was 206.

Occupations

Agriculture is the principal occupation, although in 1940 only 13 percent of the area (71,424 acres) was in cropland. In some places the valley bottoms are remarkably fertile, but large sections of the two counties are submarginal. In 1940 there were 1991 farms, and the farm income for the year was nearly $3,690,000.

Manufacturing is carried on in a small way. In 1940 there were 26 plants with a total employment of 739 and a total output valued at $3,962,800. Nearly a third of the employment (245 persons) and over half the value of the output ($2,048,900) are attributable to a leather factory in Noxen 1/.

Recreation is of increasing importance, especially in Sullivan County. There has long been a recreational development on the shore of the Eagles-mere Lake, and in more recent years the State has set up recreational facil-ities in the Wyoming State Forest in the western part of that county. In addition, the State Game Commission has established game refuges and hunt-ing lands on a large scale in southeastern Sullivan and southwestern Wyoming.

A small amount of anthracite is mined in Sullivan County. In 1940 there were 187 employed in this industry. The output totaled 50,844 tons and was valued at $77,700.

OCCUPATIONS OF POPULATION: 2/

Total population		24,206	
Not in labor force		15,690	72%
In labor force		8,516	28%
Unemployed		2,164	25%
Employed		6,352	75%
Agriculture		2,387	38%
Trade and service		2,228	35%
Manufacturing			
Metal	15)		
Textile	232)	706	11%
Food	140)		
Other	299)		
Construction		368	6%
Forest products industries			
Forestry	3)		
Logging	84)		
Milling	121)	259	4%
Wood manufacture	51)		
Transportation		244	4%
Coal mining		157	2%
Quarrying and other mining		23	*

*negligible

1/ Tenth Industrial Directory of the Commonwealth of Penna.; Dept. of Internal Affairs; compiled by Bureau of Statistics, Harrisburg, 1941.

2/ This table, based on the U. S. Census for 1940, indicates the primary occupations of the residents of Wyoming and Sullivan Counties. The figures given in the text, on the other hand, are based on the em-

Forest Description

During the nineteenth century lumber was the most important industry in these counties. All the virgin timber has now been removed except from inaccessible ravines, and the second-growth stands are being cut. In Sullivan and western Wyoming lumbering still remains the principal industry, though necessarily on a reduced scale. Many large mill sites have been abandoned; and service on the branch lines of two railroads in Sullivan County has been discontinued, transportation now being provided by trucks.

Forest area

The greater part of Sullivan County and adjoining parts of Wyoming are covered with unbroken forest land (fig. 1)3/. Northern Sullivan, a small section of southern Sullivan, and the greater part of Wyoming are in farmland with many small scattered tracts of woodland. Altogether the forest area of the two counties is 410,400 acres, or 73 percent of the whole. Nearly all of this is in tracts 50 acres or larger 4/.

	WYOMING		SULLIVAN	
	Acres	Percent	Acres	Percent
Forest land	160,200	62	250,200	82
Nonforest	98,300	38	56,100	18
Gross area	258,500	100	306,300	100

---

ployment provided by industries located within these counties. Discrepancies are due to the fact that many people live in one area and work in another.

3/ Maps showing the location of all forest tracts are available in a scale of 1" - 1 mile for each county. These maps may be ordered through the Northeastern Forest Experiment Station, 614 Bankers Securities Building, Philadelphia 7, Pennsylvania. A postal or express money order, draft, or check made out to the Treasurer of the United States, covering the full amount, should accompany the order. Prints will be forwarded from the Forest Service, Division of Engineering in Washington, D. C. Each map will cost: Wyoming County $ .40, Sullivan County $ .56.

4/ For detailed supplementary tables see Appendix.

Forest types

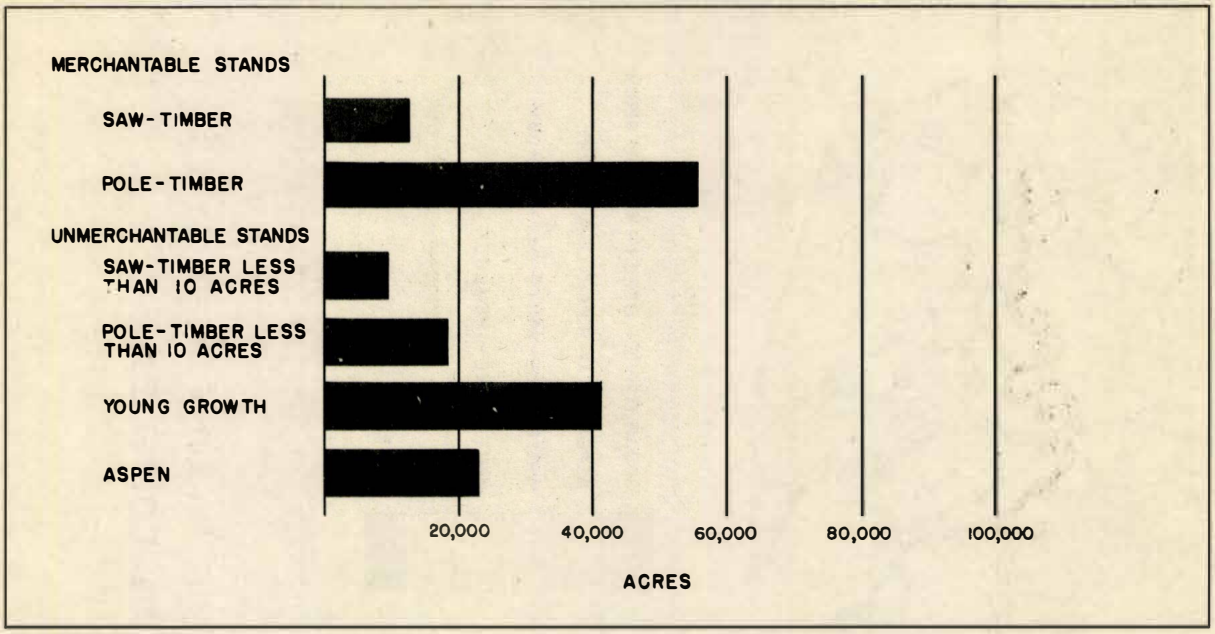
The principal forest type of this area is the sugar maple - beech - yellow birch (fig. 2). Along the Susquehanna River and in several small tracts elsewhere is the red oak - black oak - white oak type. Here and there throughout the area, especially bordering the streams, occur stands of the white pine - hemlock type. Stands of pure hemlock and a few small stands of spruce are to be found in Sullivan County. Two large areas in eastern Sullivan and western Wyoming, where clear-cutting followed by fire has destroyed much of the sugar maple - beech - yellow birch reproduction, are now covered with the aspen - gray birch - pin cherry type. The river birch - sycamore type occurs in places along the Susquehanna River and Tunkhannock Creek.

Forest condition

The forests of Wyoming and Sullivan Counties show a wide variation in condition from the unmerchantable aspen areas to areas containing some of the best saw timber in the Anthracite Forest Region (fig. 3). In Sullivan the acreage in merchantable timber stands is high, and even in Wyoming over two-fifths of the forest is in merchantable timber. In Sullivan County three-quarters of the total timber volume is in merchantable stands5/.

5/ The condition classes recognized are: 1. Saw-timber stands: stands of 10 acres or larger, each of which contains at least 2000 board feet of saw timber. 2. Pole-timber stands: stands of 10 acres or larger, each acre of which contains a minimum timber volume of approximately 5 standard cords in trees 5.0 inches diameter breast high (hereafter denoted by the initials d.b.h.) and larger, and less than 2000 board feet of saw timber. 3. Unmerchantable stands: areas of forest land which contain less than the minimum volume for pole-timber stands, plus stands of saw timber and pole timber of less than 10 acres in extent, whether isolated tracts or stands within larger forest areas.

WYOMING COUNTY



SULLIVAN COUNTY

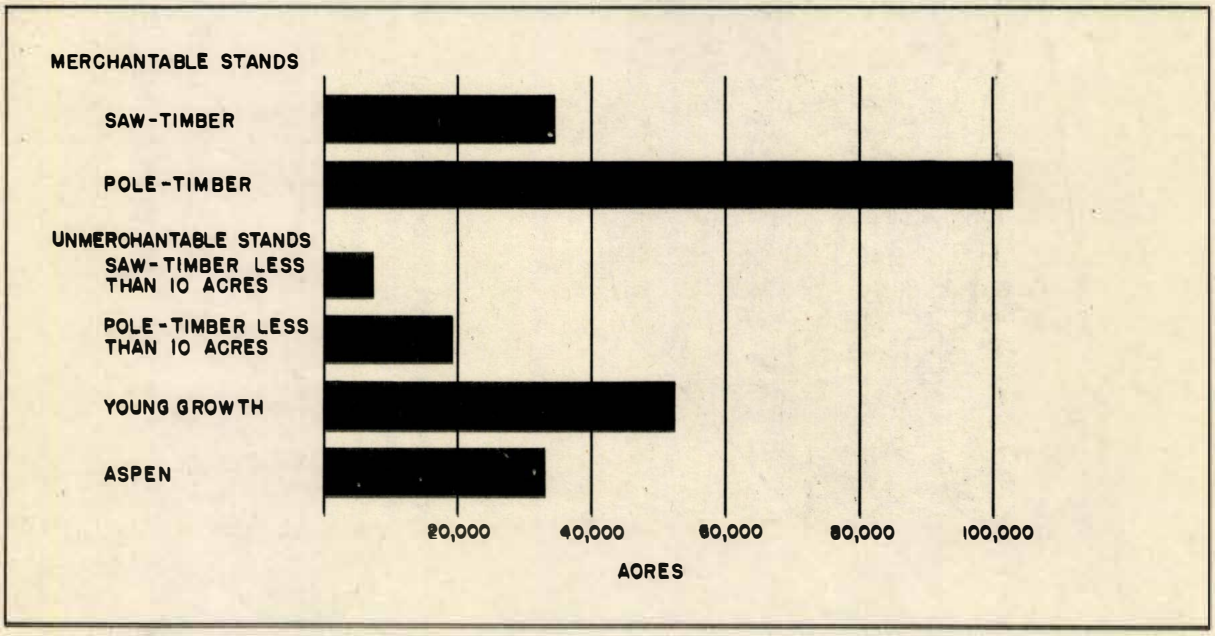
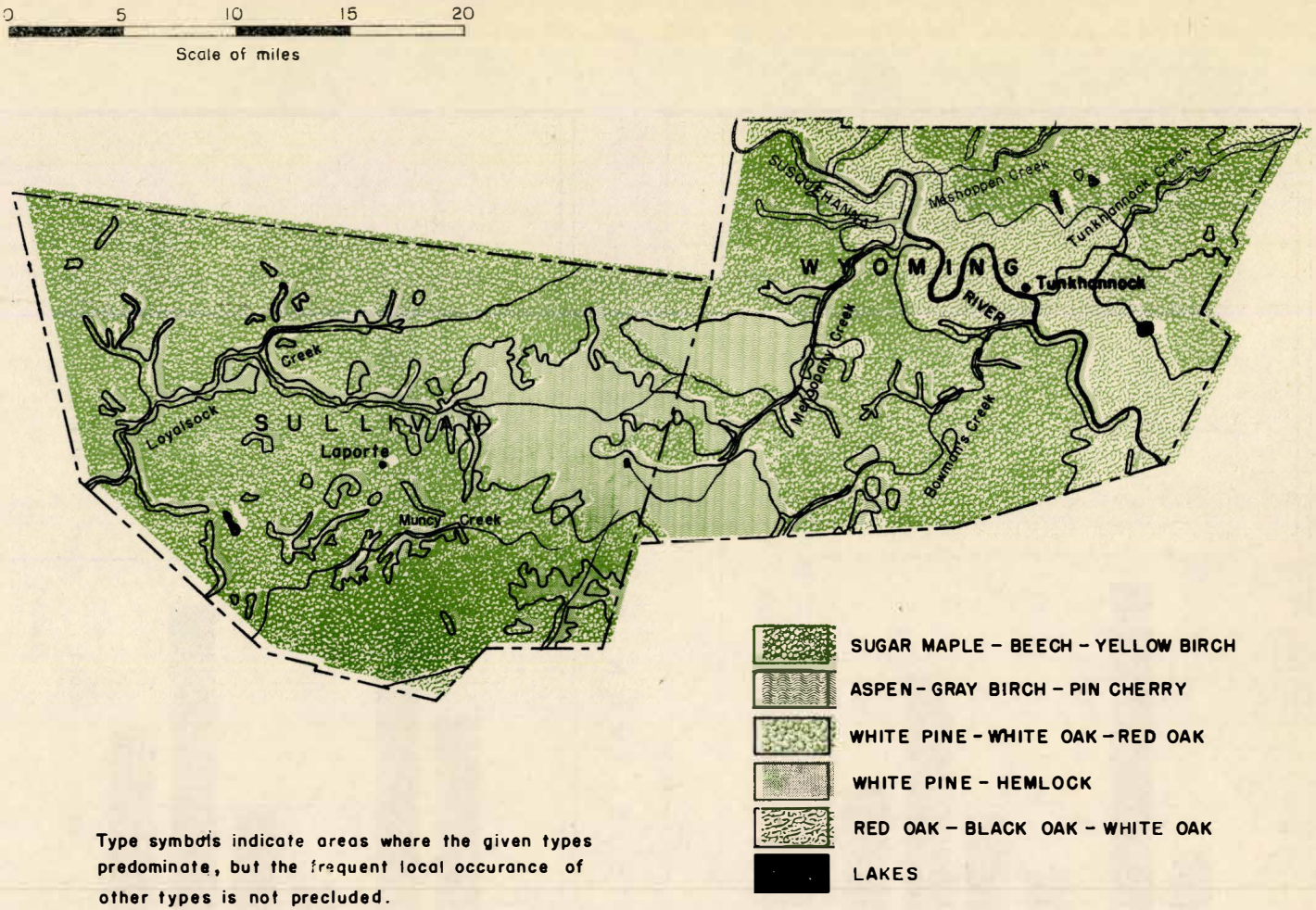


Figure 3.- THE CONDITION OF THE FOREST



Type symbols indicate areas where the given types predominate, but the frequent local occurance of other types is not precluded.

FIGURE 2.- AREAS CHARACTERIZED BY THE MAJOR FOREST TYPES IN WYOMING & SULLIVAN COUNTIES

Timber volume

The volume of saw timber and the green weight of all timber are shown in the following table: 6/

	WYOMING		SULLIVAN	
	Saw timber M bd.ft.	Total green weight Tons	Saw timber M bd.ft.	Total green weight Tons
Saw-timber stands	53,500	515,700	163,600	1,461,900
Pole-timber stands	40,000	1,066,300	48,800	1,843,700
Unmerchantable stands	69,000	1,664,100	50,700	1,083,200
Total	162,500	3,246,100	263,100	4,388,800

The distribution of the cubic-foot volume in the merchantable pole-timber stands by tree size may be seen in figure 4. Especially in Sullivan County, the greater part of the green weight of all timber is in sugar maple, beech, black cherry, white ash and basswood. In Wyoming County there are some oaks. In neither county is there any considerable amount of softwood timber in the pole-timber stands.

	WYOMING		SULLIVAN	
	Tons	Percent	Tons	Percent
Conifers	89,200	8	80,100	4
Oaks, hickory, sugar maple	396,400	37	325,600	18
Other hardwoods	580,700	55	1,438,000	78
Total	1,066,300	100	1,843,700	100

6/ Saw-timber volume is the net board foot volume of sawlog-size material in conifers 9.0 inches d.b.h. and larger, plus the net volume of saw-log-size material in hardwoods 11 inches d.b.h. and larger. Board foot volumes were based on the International 1/4" log rule, which closely approximates green lumber tally. Deductions were made for cull.
Total green weight is the weight of all trees 5.0 inches and larger, including bark and the tops and limbs to a 4-inch diameter. This was computed in cubic feet and converted to tons (green weight) by the application of cubic foot-per-ton factors, varying by species groups and averaging about 35 cubic feet per ton.

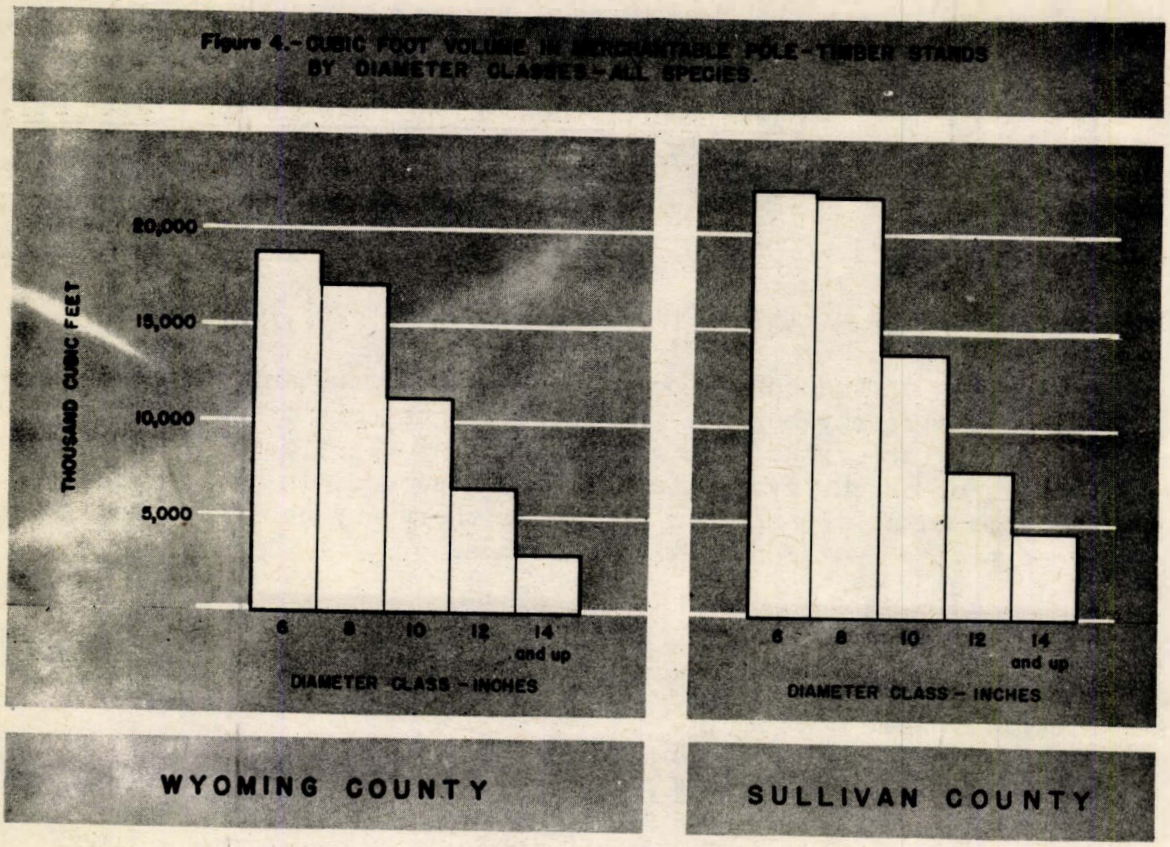
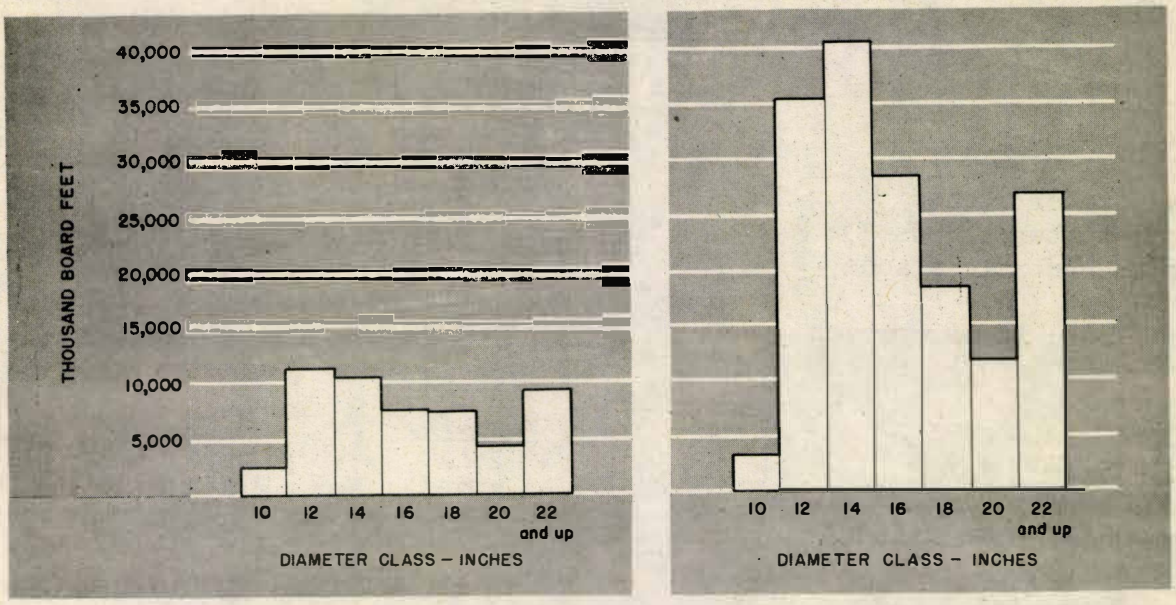


Figure 4.- CUBIC FOOT VOLUME IN MERCHANTABLE POLE-TIMBER STANDS BY DIAMETER CLASSES - ALL SPECIES.

Of the merchantable saw-timber stands, 73 percent of the area is in Sullivan County. Throughout the two counties the saw-timber stands are for the most part in young trees. Over half the area bears less than 4000 board feet to the acre. In the less accessible places, however, and in places which have been developed for recreational purposes, there still remains some virgin timber:

	WYOMING		SULLIVAN	
Thousand Board Feet per Acre	Acres	M bd.ft.	Acres	M bd.ft.
8 and more	1,400	12,900	4,300	42,400
6 to 8	1,500	9,600	3,200	22,200
4 to 6	2,700	12,400	8,700	42,600
2 to 4	7,100	18,600	18,200	56,400
Total	12,700	53,500	34,400	163,600

Figure 5.- BOARD FOOT VOLUME IN MERCHANTABLE SAW-TIMBER STANDS BY DIAMETER CLASSES - ALL SPECIES.



WYOMING COUNTY

SULLIVAN COUNTY

The species distribution of the saw timber in saw-timber stands is much the same in Sullivan County as that of the timber in the pole-timber stands, except that the percentage of conifers is considerably higher. In Wyoming County over a third of the saw timber in saw-timber stands is in conifers:

	WYOMING		SULLIVAN	
	M bd.ft.	Percent	M bd.ft.	Percent
Conifers	18,400	34	25,200	15
Oaks, hickory, sugar maple	14,100	26	21,300	13
Other hardwoods	21,000	40	117,100	72
Total	53,500	100	163,600	100

The distribution of the volume in saw-timber stands by tree size may be seen in figure 5.

Current forest growth

The following tables show the total timber growth and the saw-timber growth of the different condition classes in the two counties:

1943

Total timber growth

	WYOMING M cu.ft.	SULLIVAN M cu.ft.
Saw-timber stands	735	2,162
Pole-timber stands	3,421	4,334
Unmerchantable stands	4,715	2,867
Total timber growth	7,869	9,363

Saw timber growth

	M bd.ft.	M bd.ft.
Saw-timber stands	2,420	7,490
Pole-timber stands	3,390	4,270
Unmerchantable stands	4,720	3,550
Total saw-timber growth	10,530	15,310

Forest Products Industries

In 1942 about 14.5 million board feet of lumber was produced, two-thirds of it hardwood. Most of this lumber production is carried on in western Sullivan and the products shipped to Williamsport. Some mine-timber production is also carried on, chiefly in Wyoming County. The number of sawmills by production classes is shown below:

Production class Thousand board feet	WYOMING Number of mills	SULLIVAN Number of mills
Idle	1	0
1 to 50	1	3
50 to 500	5	5
500 to 1000	1	6
Over 1000	0	5
Total	8	19

Forest Land Ownership

The largest single administrator of land in these two counties is the State Game Commission, which controls 18 percent of the forest land. The Wyoming State Forest, operated by the State Department of Forests and Waters, comprises another 10 percent. An additional 3 percent is

county owned, making a total of 31 percent of the forest land in public ownership. Coal companies and water companies hold a negligible acreage. Farmers own 14 percent of the forest land; and the remaining 55 percent belongs to other private owners. The ownership distribution of the forest land in the two counties is shown in the following table:

	WYOMING	SULLIVAN
Public ownership	Acres	Acres
State (Department of Forests and Waters)	1,200	40,700
State Game Commission	27,000	45,500
County	5,100	6,100
Total public ownership	33,300	92,300
Private ownership		
Farmers	36,300	23,000
Others (including coal and water companies)	90,600	134,900
Total private ownership	126,900	157,900

Future Outlook in Brief

The forests in part of this area, especially in the neighborhood of North Mountain, are in better condition than those in any other section of the Anthracite Forest Region. But they are still far from being as productive as good management could make them. Largely in the sugar maple - beech - yellow birch type, they are potentially of great value. Under a selective system of management they could produce a continuous harvest of high grade lumber and at the same time provide large quantities of smaller material.

The greatest need of these forests, then, is the extension of good forest management practices. Thinning and weeding, with spot-planting of commercial species in areas now stocked with aspen, would soon show results.

Any considerable expansion of public ownership in this area, except to consolidate scattered tracts already publicly owned, is probably not desirable. The forests here are generally good commercial ventures and can be managed profitably by private owners. Even the areas now in aspen - gray birch - pin cherry are potentially good sugar maple - beech - yellow birch stands. They will eventually return to merchantability even if nothing is done but to protect them from further depredations by fire.

APPENDIX

Tables 1 to 9 - Wyoming County

Tables 1 to 9 Sullivan County

WYOMING COUNTY

Table 1.-- Land use

Land use	Area Acres	Proportion of class Percent	Proportion of gross area Percent
Forest 1/			
Tracts less than 10 acres	4,600	2.9	1.8
Tracts 10 up to 50 acres	15,500	9.7	6.0
Tracts 50 acres and over	140,100	87.4	54.2
All forest land	160,200	100.0	62.0
Nonforest			
Crop land 2/	47,000	47.8	18.1
Water 2/	4,800	4.9	1.9
Other	46,500	47.3	18.0
All nonforest land	98,300	100.0	38.0
Gross area	258,500		100.0

1/ Based on aerial photographs taken in 1937.

2/ Bureau of the Census, 1940.

Table 2.--Forest area by minor civil divisions

Civil Division 1/	Gross area	Nonforest area	Forest area	Proportion gross area in forest	Proportion of county forest land
	Acres	Acres	Acres	Percent	Percent
Braintrim t., Laceyville b.	4,500	2,700	1,800	39.6	1.1
Clinton t., Factoryville b.	8,100	4,800	3,300	40.8	2.1
Eaton t.	23,300	6,100	17,200	73.6	10.7
Exeter t.	1,700	800	900	50.7	.6
Falls t.	13,200	7,500	5,700	43.2	3.6
Forkston t.	47,900	4,800	43,100	90.0	26.9
Lemon t.	10,500	6,000	4,500	43.2	2.8
Mehoopany t.	11,300	6,200	5,100	45.0	3.2
Meshoppen t., Meshoppen b.	10,900	7,000	3,900	36.1	2.4
Monroe t.	13,900	6,000	7,900	56.8	4.9
Nicholson t., Nicholson b.	15,600	8,600	7,000	44.7	4.4
North Branch t.	12,200	2,700	9,500	78.1	5.9
Northmoreland t.	13,000	5,700	7,300	56.3	4.6
Noxen t.	18,200	2,200	16,000	87.7	10.0
Overfield t.	6,500	3,700	2,800	43.7	1.7
Tunkhannock t., Tunkhannock b.	20,900	10,100	10,800	51.8	6.7
Washington t.	12,300	7,400	4,900	39.7	3.1
Windham t.	14,500	6,000	8,500	58.6	5.3
All civil divisions	258,500	98,300	160,200	62.0	100.0

1/ Abbreviations: t. - township; b. - borough

Table 3.--Forest area by forest types and conditions

Forest type	Saw-timber stands		Pole-timber stands		Unmerchantable stands		All stands	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Northern hardwoods	7,600	59.9	38,200	68.8	39,600	43.1	85,400	53.3
Aspen - gray birch - pin cherry	-	-	3,500	6.3	23,000	25.0	26,500	16.5
White pine - hemlock	3,500	27.6	4,500	8.1	5,700	6.2	13,700	8.6
White pine - white oak - red oak	-	-	100	0.2	300	0.3	400	0.2
White oak - red oak - black oak	1,600	12.5	9,000	16.2	23,000	25.0	33,600	21.0
Other	-	-	200	0.4	400	0.4	600	0.4
All types	12,700	100.0	55,500	100.0	92,000	100.0	160,200	100.0

Table 4.--Volume by Forest Types

Forest type	Sawlog volume M bd.ft.	Total volume M cu.ft.
Sugar maple - beech - yellow birch	101,800	76,850
Aspen - gray birch - pin cherry	1,800	8,020
White pine - hemlock	29,100	14,290
White pine - white oak - red oak	400	300
Red oak - black oak - white oak	29,100	22,380
Chestnut oak	--	--
Scrub oak	--	--
Other	300	260
All forest types	162,500	122,100

Table 5.--Forest area by forest conditions and volume-per-acre classes

Forest condition and volume-per-acre classes	Area	Proportion of each condition	Proportion of total forest land
	Acres	Percent	Percent
Merchantable:			
Saw-timber stands 1/ (bd. ft. per acre)			
8,000 and over	1,400	11.0	0.9
6,000 to 7,999	1,500	11.8	0.9
4,000 to 5,999	2,700	21.3	1.7
2,000 to 3,999	7,100	55.9	4.4
All saw-timber stands	12,700	100.0	7.9
Pole-timber stands 2/ (cords per acre)			
10.0 and over	18,400	33.2	11.5
5.0 to 9.9	37,100	66.8	23.2
All pole-timber stands	55,500	100.0	34.7
All merchantable stands	68,200		42.6
Unmerchantable:			
Saw-timber stands less than 10 acres	9,500		5.9
Pole-timber stands less than 10 acres	18,300		11.4
Young growth stands	41,200		25.7
Aspen stands	23,000		14.4
All unmerchantable stands	92,000		57.4
All forest land	160,200		100.0

1/ In stands 10 acres or larger each acre of which has at least 2,000 board feet (lumber tally).

2/ In stands 10 acres or larger each acre of which has at least 5 cords (400 cubic feet) but less than 2,000 board feet.

Table 6.--Volume by forest conditions and volume-per-acre classes

Forest condition and volume-per-acre classes	Saw-timber volume (lumber tally) 1/		Total volume (including bark)			
	M bd.ft.	Percent	M cu.ft.	Percent	Cords	Tons
Merchantable:						
Saw-timber stands (bd. ft. per acre)						
8,000 and over	12,900	7.9	3,640	3.0	47,200	94,900
6,000 to 7,999	9,600	5.9	3,050	2.5	39,400	79,400
4,000 to 5,999	12,400	7.6	4,500	3.7	58,100	117,100
2,000 to 3,999	18,600	11.5	8,590	7.0	111,300	224,300
All saw-timber stands	53,500	32.9	19,780	16.2	256,000	515,700
Pole-timber stands (cords per acre)						
10.0 and over	18,800	11.6	16,880	13.8	222,200	452,100
5.0 to 9.9	21,200	13.0	22,880	18.8	302,000	614,200
All pole-timber stands	40,000	24.6	39,760	32.6	524,200	1,066,300
All merchantable stands	93,500	57.5	59,540	48.8	780,200	1,582,000
All unmerchantable stands	69,000	42.5	62,560	51.2	834,200	1,664,100
All forest land	162,500	100.0	122,100	100.0	1,614,400	3,246,100

1/ Based on the International 1/4-inch rule which closely approximates green lumber tally.

Table 7.--Volume in merchantable stands by species groups

Merchantable class and species group	Saw-timber volume (lumber tally)		Total volume (including bark)					
	M bd.ft.	Percent	M cu.ft.	Percent	Cords 1/	Percent	Tons 2/	Percent
Saw-timber stands								
Conifer	18,400	34.3	4,960	25.1	58,400	22.8	112,700	21.9
Oaks, hickory, and hard maple	14,100	26.3	5,080	25.7	67,700	26.5	153,900	29.8
Other hardwoods	21,000	39.4	9,740	49.2	129,900	50.7	249,100	48.3
All species	53,500	100.0	19,780	100.0	256,000	100.0	515,700	100.0
Pole-timber stands								
Conifers	8,400	20.8	3,900	9.8	45,900	8.8	89,200	8.4
Oaks, hickory, and hard maple	14,800	37.1	13,040	32.8	173,900	33.2	396,400	37.2
Other hardwoods	16,800	42.1	22,820	57.4	304,400	58.0	580,700	54.4
All species	40,000	100.0	39,760	100.0	524,200	100.0	1,066,300	100.0
All merchantable stands	93,500		59,540		780,200		1,582,000	

1/ Based on 85 cubic feet per cord for conifers and 75 cubic feet per cord for hardwoods.

2/ Based on cubic feet-per-ton converting factors for the principal species.

Table 8.--Board foot volume in merchantable saw-timber stands by diameter classes and species groups

Diameter class (d.b.h.)	Conifers 1/		Oaks hickory, hard maple 2/		Other hardwoods 3/		All species	
Inches	M bd.ft.	Percent	M bd.ft.	Percent	M bd.ft.	Percent	M bd.ft.	Percent
10	2,700	14.8					2,700	5.1
12	3,800	20.3	2,500	18.0	5,100	24.2	11,400	21.3
14	3,100	16.9	2,400	16.7	5,100	24.1	10,600	19.8
16	2,400	13.2	2,500	17.5	2,700	13.0	7,600	14.2
18	2,000	10.7	2,700	18.9	2,800	13.1	7,500	14.0
20	1,500	8.2	1,100	7.9	1,800	8.8	4,400	8.2
22 & up	2,900	15.9	2,900	21.0	3,500	16.8	9,300	17.4
All classes	18,400	100.0	14,100	100.0	21,000	100.0	53,500	100.0

1/ Principally hemlock and white pine, with some pitch pine and red spruce.

2/ Principally hard maple, red and white oak, with some hickory and chestnut, black, scarlet, and pin oaks.

3/ Principally beech, red maple, white ash and yellow birch, with some basswood black cherry, walnut, sycamore, willow, black locust, elm and yellow poplar.

WYOMING COUNTY

Table 9.--Cubic foot volume in merchantable pole-timber stands by diameter classes and species groups

Diameter class (d.b.h.)	Conifers 1/			Hickory, oaks, hard maple 2/			Other hardwoods 3/			All species		
Inches	M cu.ft.	Percent	Tons	M cu.ft.	Percent	Tons	M cu.ft.	Percent	Tons	M cu.ft.	Percent	Tons
6	170	4.4	3,900	430	3.3	13,100	1,280	5.6	32,500	18,800	4.7	49,500
8	1,630	41.7	37,200	5,200	39.9	158,200	10,340	45.3	263,100	17,170	43.2	458,500
10	1,220	31.4	28,000	3,400	26.1	103,400	6,500	28.5	165,500	11,120	28.0	296,900
12	720	18.4	16,400	2,430	18.6	73,700	3,420	15.0	87,100	6,570	16.5	177,200
14 & up	160	4.1	3,700	1,580	12.1	48,000	1,280	5.6	32,500	3,020	7.6	84,200
All classes	3,900	100.0	89,200	13,040	100.0	396,400	22,820	100.0	580,700	39,760	100.0	1,066,300

1/ Principally hemlock and white pine, with some pitch pine.

2/ Principally red, white, and chestnut oak with some hard maple, scarlet oak, and hickory.

3/ Principally red maple, beech, yellow birch, white ash and black birch with some black cherry, aspen, basswood, elm, red birch, gray birch, ironwood, and dogwood.

Table 1.--Land use

Land use	Area Acres	Proportion of class Percent	Proportion of gross area Percent
Forest 1/			
Tracts less than 10 acres	3,200	1.2	1.0
Tracts 10 up to 50 acres	4,600	1.8	1.5
Tracts 50 acres and over	242,400	97.0	79.2
All forest land	250,200	100.0	81.7
Nonforest			
Cropland 2/	24,400	43.5	8.0
Mine waste 1/	100	0.2	*
Water 2/	600	1.1	0.2
Other	31,000	55.2	10.1
All nonforest land	56,100	100.0	18.3
Gross	306,300	100.0	100.0

1/ Based on aerial photographs taken in 1939.

2/ Bureau of the Census, 1940.

* Negligible

Table 2.--Forest area by minor civil divisions

Civil Division 1/	Gross area	Nonforest area	Forest area	Proportion gross area in forest	Proportion of county forest land
	Acres	Acres	Acres	Percent	Percent
Cherry t., Dushore b.	40,200	17,600	22,600	56.2	9.0
Colley t.	39,500	5,800	33,700	85.3	13.5
Davidson t.	57,300	4,600	52,700	91.9	21.1
Elkland t.	26,100	9,300	16,800	64.2	6.7
Forks t., Forksville b.	30,800	6,900	23,900	77.7	9.6
Fox t.	26,900	4,300	22,600	84.1	9.0
Hillsgrove t.	20,200	2,600	17,600	87.3	7.0
Laporte t., Laporte b.	30,900	2,400	28,500	92.2	11.4
Shrewsbury t., Eagles Mere b.	34,400	2,600	31,800	92.3	12.7
All civil divisions	306,300	56,100	250,200	81.7	100.0

1/ Abbreviations: t. - township, b. - borough

Table 3.--Forest area by forest types and conditions

Forest type	Saw-timber stands		Pole-timber stands		Unmerchantable stands		All stands	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Northern hardwoods	21,500	62.5	84,200	81.6	53,900	47.8	159,600	63.8
Aspen - gray birch - pin cherry	-	-	2,600	2.5	33,200	29.5	35,800	14.3
White pine - hemlock	12,900	37.5	15,200	14.7	25,000	22.2	53,100	21.2
White oak - red oak - black oak	-	-	1,200	1.2	300	0.3	1,500	0.6
Other	-	-	-	-	200	0.2	200	0.1
All types	34,400	100.0	103,200	100.0	112,600	100.0	250,200	100.0

Table 4.--Volume by forest types

Forest type	Sawlog volume M bd.ft.	Total volume M cu.ft.
Sugar maple - beech - yellow birch	165,800	114,620
Aspen - gray birch - pin cherry	1,500	10,460
White pine - hemlock	95,200	42,820
White pine - white oak - red oak	--	--
Red oak - black oak - white oak	500	800
Chestnut oak	--	--
Scrub oak	--	--
Other	100	80
All forest types	263,100	168,780

Table 5.--Forest area by forest conditions and volume-per-acre classes

Forest condition and volume-per-acre classes	Area	Proportion of each condition	Proportion of total forest land
	Acres	Percent	Percent
Merchantable:			
Saw-timber stands 1/ (bd. ft. per acre)			
8,000 and over	4,300	12.5	1.7
6,000 to 7,999	3,200	9.3	1.3
4,000 to 5,999	8,700	25.3	3.5
2,000 to 3,999	18,200	52.9	7.3
All saw-timber stands	34,400	100.0	13.8
Pole-timber stands 2/ (cords per acre)			
10.0 and over	36,800	35.7	14.7
5.0 to 9.9	66,400	64.3	26.5
All pole-timber stands	103,200	100.0	41.2
All merchantable stands	137,600		55.0
Unmerchantable:			
Saw-timber stands less than 10 acres	7,300		2.9
Pole-timber stands less than 10 acres	19,300		7.7
Young growth	52,800		21.1
Aspen stands	33,200		13.3
All unmerchantable stands	112,600		45.0
All forest land	250,200		100.0

1/ In stands 10 acres or larger each acre of which has at least 2,000 board feet (lumber tally).

2/ In stands 10 acres or larger each acre of which has at least 5 cords (400 cubic feet) but less than 2,000 board feet.

Table 6.--Volume by forest conditions and volume-per-acre classes

Forest condition and volume-per-acre classes	Saw-timber volume (lumber tally)[1/]		Total volume (including bark)			
	M bd.ft.	Percent	M cu.ft.	Percent	Cords	Tons
Merchantable:						
Saw-timber stands (bd. ft. per acre)						
8,000 and over	42,400	16.1	11,430	6.7	150,300	293,900
6,000 to 7,999	22,200	8.4	6,710	4.0	88,200	172,500
4,000 to 5,999	42,600	16.2	15,170	9.0	199,600	390,300
2,000 to 3,999	56,400	21.4	23,450	13.9	309,600	605,200
All saw-timber stands	163,600	62.1	56,760	33.6	747,700	1,461,900
Pole-timber stands (cords per acre)						
10.0 and over	26,000	9.9	33,130	19.6	439,500	868,400
5.0 to 9.9	22,800	8.7	37,230	22.1	493,400	975,300
All pole-timber stands	48,800	18.6	70,360	41.7	932,900	1,843,700
All merchantable stands	212,400	80.7	127,120	75.3	1,680,600	3,305,600
All unmerchantable stands	50,700	19.3	41,660	24.7	555,500	1,083,200
All forest land	263,100	100.0	168,780	100.0	2,236,100	4,388,800

1/ Based on the International 1/4-inch rule which closely approximates green lumber tally.

Table 7.--Volume in merchantable stands by species groups

Merchantable class and species group	Saw-timber volume (lumber tally)		Total volume (including bark)					
	M bd.ft.	Percent	M cu.ft.	Percent	Cords 1/	Percent	Tons 2/	Percent
Saw-timber stands								
Conifers	25,200	15.4	5,900	10.4	69,400	9.3	139,800	9.6
Oaks, hickory, and hard maple	21,300	13.0	6,920	12.2	92,300	12.3	198,300	13.6
Other hardwoods	117,100	71.6	43,940	77.4	586,000	78.4	1,123,800	76.8
All species	163,600	100.0	56,760	100.0	747,700	100.0	1,461,900	100.0
Pole-timber stands								
Conifers	7,100	14.6	3,380	4.8	39,800	4.3	80,100	4.3
Oaks, hickory, and hard maple	8,900	18.2	11,330	16.1	151,100	16.2	325,600	17.7
Other hardwoods	32,800	67.2	55,650	79.1	742,000	79.5	1,438,000	78.0
All species	48,800	100.0	70,360	100.0	932,900	100.0	1,843,700	100.0
All merchantable stands	212,400		127,120		1,680,600		3,305,600	

1/ Based on 85 cubic feet per cord for conifers and 75 cubic feet per cord for hardwoods.

2/ Based on cubic feet-per-ton converting factors for the principal species.

Table 8.--Board foot volume in merchantable saw-timber stands by diameter classes and species groups

Diameter class (d.b.h.) (Inches)	Conifers 1/		Oaks hickory, hard maple 2/		Other hardwoods 3/		All species	
	M bd.ft.	Percent	M bd.ft.	Percent	M bd.ft.	Percent	M bd.ft.	Percent
10	3,300	13.0					3,300	2.0
12	4,000	15.7	2,900	13.7	28,200	24.1	35,100	21.5
14	5,600	22.4	4,200	19.7	30,500	26.0	40,300	24.6
16	3,500	14.0	1,700	7.7	23,000	19.6	28,200	17.2
18	1,800	7.0	1,400	6.6	15,200	13.0	18,400	11.3
20	1,400	5.5	1,800	8.6	8,400	7.2	11,600	7.1
22 & up	5,600	22.4	9,300	43.7	11,800	10.1	26,700	16.3
All classes	25,200	100.0	21,300	100.0	117,100	100.0	163,600	100.0

1/ Principally hemlock and white pine, with some red spruce.

2/ Principally hard maple with some white, red and chestnut oak.

3/ Principally red maple, beech, white ash, and yellow birch with some black cherry, basswood, black birch and elm.

Table 9.--Cubic foot volume in merchantable pole-timber stands by diameter classes and species groups

Diameter class (d.b.h.)	Conifers 1/			Oaks & hard maple 2/			Other hardwoods 3/			All species		
Inches	M cu.ft.	Percent	Tons	M cu.ft.	Percent	Tons	M cu.ft.	Percent	Tons	M cu.ft.	Percent	Tons
6	750	22.3	17,900	3,400	30.0	97,700	18,090	32.5	467,400	22,240	31.7	583,000
8	860	25.3	20,300	3,350	29.6	96,400	17,750	31.9	458,700	21,960	31.2	575,400
10	770	22.8	18,200	2,120	18.7	60,900	10,850	19.5	280,400	13,740	19.5	359,500
12	610	18.1	14,500	1,410	12.4	40,300	5,730	10.3	148,100	7,750	11.0	202,900
14 & up	390	11.5	9,200	1,050	9.3	30,300	3,230	5.8	83,400	4,670	6.6	122,900
All classes	3,380	100.0	80,100	11,330	100.0	325,600	55,650	100.0	1,438,000	70,360	100.0	1,843,700

1/ Principally hemlock and white pine with some pitch pine and red spruce.

2/ Principally hard maple with some hickory and red, white, chestnut, and scarlet oak.

3/ Principally red maple, beech, yellow birch, white ash and black birch with some black cherry, aspen, basswood, elm, red birch, gray birch, ironwood, and dogwood.

Anthracite Survey Papers

No.	Title
1	Survey of Forest Employment Possibilities in the Anthracite Region of Pennsylvania
2	Intensified Protection of Wyoming Valley Forests Against Fire Through Use of Community Labor*
3	Tax Delinquency of Forest Lands in the Anthracite Region of Pennsylvania**
4	Volume Tables for Commercial Timber in the Anthracite Region of Pennsylvania*
5	The Forests of Luzerne County, Pennsylvania, in Relation to Employment and Welfare
6	The Population and Employment Outlook for the Anthracite Region of Pennsylvania
7	The Forest Situation in Pike and Monroe Counties
8	The Forest Situation in Dauphin and Lebanon Counties
9	The Forest Situation in Schuylkill and Carbon Counties
10	The Forest Situation in Wyoming and Sullivan Counties
11	The Forest Situation in Northumberland, Columbia and Montour Counties***
12	The Forest Situation in Luzerne and Lackawanna Counties***
13	The Forest Situation in Wayne and Susquehanna Counties***

* Supply limited
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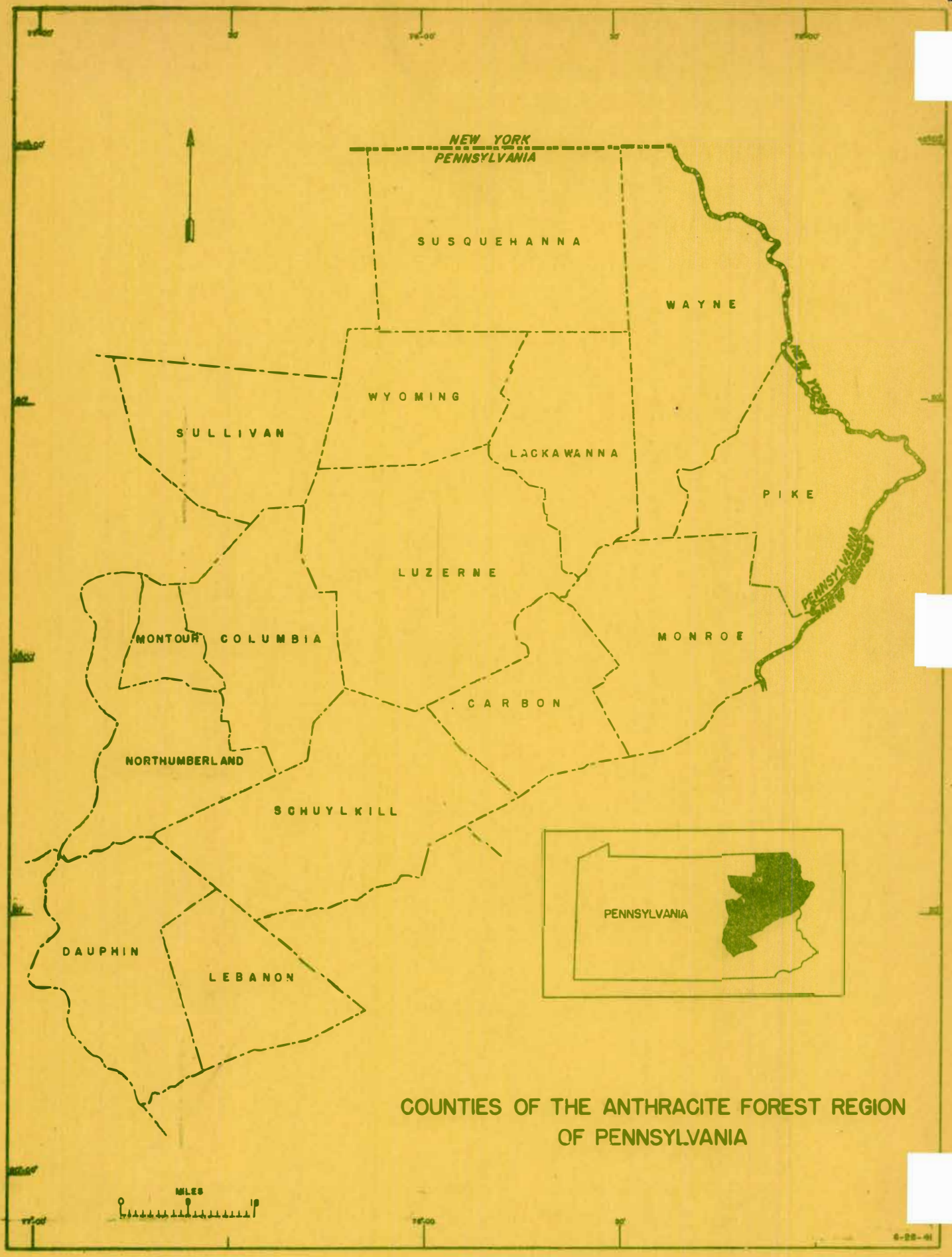

COUNTIES OF THE ANTHRACITE FOREST REGION
OF PENNSYLVANIA